PUBLIC NOTICE

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WIRELESS TELECOMMUNICATIONS BUREAU REQUESTS TARGETED COMMENT ON WIRELESS E911 PHASE II AUTOMATIC LOCATION IDENTIFICATION REQUIREMENTS

CC Docket No. 94-102

Comment Date: June 17, 1999
Reply Comment Date: June 28, 1999

INTRODUCTION

The Commission's rules governing Enhanced 911 (E911) services currently require that covered wireless carriers deploy Automatic Location Identification (ALI) as part of E911 service beginning October 1, 2001, provided certain conditions are met.[1] Section 20.18(e) of the Commission's Rules requires covered carriers to provide the location of all 911 calls by longitude and latitude such that the accuracy for all calls is 125 meters or less using a Root Mean Square (RMS) methodology.[2]

In the *E911 Reconsideration Order*, the Commission noted its concern that the effect of Section 20.18(e) might not be technologically and competitively neutral for some technologies that might be used to provide ALI, particularly handset-based technologies such as those using the Global Positioning Satellite (GPS) system.[3] In addition, the Commission

[1] Section 20.18 of the Commission's Rules, 47 C.F.R. § 20.18. *See* Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, CC Docket No. 94-102, Report and Order and Further Notice of Proposed Rulemaking, 11 FCC Rcd 18676 (1996) (*E911 First Report and Order* and *E911 Second NPRM*) (*inter alia*, adopting ALI requirements as part of Phase II of E911 implementation), *recon.*, 12 FCC Rcd 22665 (1997) (*E911 Reconsideration Order*), *further recon. pending*.

[2] Section 20.18(e) of the Commission's Rules, 47 C.F.R. § 20.18(e).

[3] *E911 Reconsideration Order*, 12 FCC Rcd at 22725.

indicated its willingness to consider such issues either in the E911 rulemaking or in response to requests for waivers.[4]

On December 24, 1998, the Wireless Telecommunications Bureau (Bureau) released the *Waiver Public Notice* outlining a filing schedule to assist those interested in filing waivers for handset-based approaches to the Phase II ALI requirements.[5] A number of parties filed waiver requests and other pleadings responding to the *Waiver Public Notice* and the waiver requests. While the waiver requests were primarily submitted by carriers, responsive pleadings and comments were filed by a variety of entities, including developers of ALI technologies and public safety entities.[6]

In order to expedite decisionmaking on whether or not to promulgate Phase II standards in light of the potential availability of handset-based technologies, the Bureau is here seeking targeted comment on: (1) whether to adopt standards for handset approaches similar to those outlined in two specific proposals submitted in the proceeding;[7] (2) how specifically to handle the issues of roaming and handset turnover; and (3) whether we should clarify or modify our methodology for determining ALI accuracy under Phase II. Comments submitted in response to this Public Notice will be included in the pending wireless E911 docket, and may be utilized by the Commission in its further development of policies and rules for wireless E911 deployment, as well as, potentially, in its consideration of the pending waiver requests.

STANDARDS FOR HANDSET-BASED SOLUTIONS

Our *Waiver Public Notice* sought comment on the accuracy standards that should apply to handset-based solutions as part of our Phase II requirements or as a condition of any Phase II waiver that we would grant. Based on the waiver petitions filed in response to that Public Notice and the comment received on those petitions, we here are seeking targeted comment on certain specific standards proposed by interested parties, including two proposals filed since the end of the formal pleading cycle on the *Waiver Public Notice*.

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[4] *Id.*

[5] Public Notice, Wireless Telecommunications Bureau Outlines Guidelines for Wireless E911 Rule Waivers for Handset-Based Approaches to Phase II Automatic Location Identification Requirements, 13 FCC Rcd 24609 (1998) (*Waiver Public Notice*).

[6] *See* KSI Reply; SigmaOne Opposition; TruePosition Response; Public Safety Associations' Comments [NENA, APCO, and NASNA]; SnapTrack Comments; Texas Instruments' Comments.

[7] *See* SnapTrack Comments of February 25, 1999 (following the conclusion of the period established by the Commission for filing waiver requests, oppositions, replies, and other responsive pleadings, *see Waiver Public Notice* at 5); Further Comments of APCO dated May 25, 1999 (APCO Further Comments).

The first proposal was filed by SnapTrack, a developer of a handset-based solution incorporating GPS technology. SnapTrack has proposed conditions under which, it argues, carriers deploying a handset-based solution should be deemed compliant with the Phase II requirements. According to SnapTrack, the Commission should deem carriers to be in compliance if they: (1) begin to deploy location-capable handsets by January 1, 2001; (2) deploy only location-capable handsets after December 31, 2001; and (3) achieve location accuracy of 90 meters using circular error probability (CEP) methodology.[8] Under the proposal, location-capable handsets would be initially deployed in advance of the October 1, 2001, deadline, which SnapTrack argues would benefit the public by making Phase II ALI available to subscribers before it would otherwise be required.

A second proposal was filed by APCO, an association of public safety communications officials. APCO has proposed that we permit a carrier to implement a handset-based solution only if it deploys ALI-capable handsets according to a specific schedule and meets firm deadlines for achieving specific levels of ALI-capable handsets among all of its subscribers.[9] Specifically, APCO proposes that the waiver conditions should include the following: (1) carriers must begin to offer ALI-capable handsets no later than January 1, 2001; at least 80 percent of handsets being deployed on the carrier's system must be ALI-capable as of December 31, 2001; and 100 percent of handsets being deployed on the carrier's system must be ALI capable as of December 31, 2002; (2) 25 percent of all phones in use on the carrier's system must be ALI-capable by the end of 2002, 50 percent must be ALI-capable by the end of 2003; 75 percent must be ALI-capable by the end of 2004; and 100 percent must be ALI-capable by the end of 2005;[10] (3) carriers must commit to a specific average accuracy level substantially better than the current Phase II requirement; and (4) carriers must agree to implement technologies that meet industry standards for interfacing with all carriers and PSAPs.[11]

Under both proposals, carriers deploying a handset-based solution would be required to start providing ALI on wireless 911 calls before the October 1, 2001, deadline and to provide ALI to a greater degree of accuracy than required under the Commission's rules.

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[8] SnapTrack Comments at 4.

[9] *See* APCO Further Comments at 2-3.

[10] APCO proposes that any carrier that fails to meet any of the benchmarks be subject to revocation of its waiver, imposition of fines, or in extreme cases, license revocation. APCO Further Comments at 3.

[11] APCO Further Comments at 2-3.

Other parties have proposed similar approaches relating to early deployment and increased accuracy.[12] For instance, with regard to location accuracy, AirTouch has suggested that we approve ALI-capable handsets that provide ALI with 90-meter accuracy and 70 percent reliability as determined using CEP.[13] Similarly, Ameritech has suggested that we require handset-based solutions to meet a two-dimensional location accuracy standard of 90 meters with 67 percent confidence.[14]

On the other hand, some parties have argued that any change to the Commission's rules that permits something less than 100 percent compliance by October 1, 2001, will unduly delay the availability of ALI to all Americans.[15] These parties assert that the public

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[12] *See, e.g.*, PrimeCo Petition for Waiver at 9 (requesting waiver that would deem it in compliance if it offers to subscribers ALI-capable handsets prior to October 1, 2001, and such handsets supply ALI that exceeds the accuracy/reliability thresholds of the Commission's rules); CenturyTel Request for Waiver at 4 (it would do the following so long as "technically and economically feasible and consistent with technological capabilities of the PSAP": (1) begin to deploy ALI-capable handsets upon customer requests no later than January 1, 2001; (2) deploy only ALI-capable handsets beginning on January 1, 2002, provided that all conditions for Phase II requirements have been met; (3) explore meeting a higher accuracy standard; and (4) undertake a public awareness campaign on the availability and benefits of ALI-capable handsets).

[13] AirTouch Comments and Petition for Waiver at 6 (carriers should be deemed compliant if they (1) offer ALI-capable handsets to customers prior to October 1, 2001 and (2) the ALI-capable handsets provide ALI with 90-meter accuracy and 70 percent reliability as determined using CEP).

[14] Ameritech Request for Waiver at 2 (Commission should consider a carrier compliant if it (1) works in good faith with handset manufacturers to create a reasonable deployment plan prior to deployment of a location-enabled handset solution (possibly including a mix of handset-based and network-based solutions within Ameritech's coverage area); (2) utilizes a handset-based solution that meets a two-dimensional location accuracy standard of 90 meters with 67 percent confidence; and (3) undertakes an active program to promote awareness of the availability and public safety benefits of location-enabled handsets). *See also* Powertel Waiver Petition at 2 (unpaginated) (seeking same waiver as Ameritech, except that it would commit to begin deployment of location-enabled handsets no later than January 1, 2001, and would deploy only location-enabled handsets beginning on January 1, 2002, provided that all conditions for Phase II requirements have been met).

[15] *See generally* Cell-Loc Comments; KSI Reply; Phase II Working Group Comments [KSI, TruePosition, Corsair, and SigmaOne Communications]; SigmaOne Opposition; TruePosition Response; Letter to Magalie Roman Salas, FCC, from Antoinette Cook Bush, Counsel to TruePosition, CC Docket No. 94-102, dated April 29, 1999 (TruePosition *Ex Parte*). *See also* Comments of Public Safety Associations [APCO, NENA, and NASNA] (asserting that waiver applicants have failed to adequately support their requests); Letter to William E. Kennard, FCC, from Ron J. Anderson, M.D., Parkland Health and Hospital System, CC Docket No. 94-102, dated March 16, 1999 (opposing delay in imposition of Phase II requirements).

interest would not be served by permitting such a phased-in implementation schedule despite any putative benefits from an earlier start date and greater degree of accuracy.[16]

Because the SnapTrack and APCO submissions were filed late in the waiver proceeding, preventing some interested parties from commenting on these proposals, and because the Bureau believes that targeted comment focused on specific proposals will expedite decisionmaking, we are seeking additional comments on these proposals.

ROAMING PROBLEMS AND HANDSET TURNOVER

In response to the *Waiver Public Notice*, petitioners and commenters provided limited information concerning steps to minimize the problems likely to be encountered by customers without ALI-capable handsets roaming outside of service areas that have adopted a network-based solution and into areas where a carrier has deployed a handset-based solution. We are concerned that, because the handsets of such "roamers" will lack the necessary equipment or software needed for the carrier's handset-based approach, the carrier may not provide ALI for all calls, as the Commission's rules require. Waiver proponents predict that roamer issues will be insubstantial and will disappear over time as a result of handset churn and the fact that manufacturers will take advantage of economies of scale and mass produce ALI-capable handsets.[17] In addition, several parties contend that, even if a roamer cannot be located to Phase II specifications, the carrier will be able to provide the PSAP with Phase I-level location information.[18] We request additional information regarding the extent of roamers who may not have ALI-capable handsets and other concerns related to providing ALI for roamers without ALI-capable handsets.[19] We also request additional information with respect to the usefulness of Phase I location information as a back-up for wireless users without ALI-capable handsets.

While a number of parties commented on various aspects of handset deployment, only one commenter specifically addressed the handling of subscribers who do not replace their

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[16] *Id.*

[17] *See* Aerial Communications Petition for Waiver at 5-6; AirTouch Comments and Petition for Waiver at 14-15; Ameritech Request for Waiver at 5-6; Cellular Phone of Kentucky Petition for Waiver at 2; CenturyTel Request for Waiver at 7-8; Powertel Petition for Waiver at 4-5 (unpaginated); PrimeCo Petition for Waiver at 8-9; US WEST Petition for Waiver at 10-11; SnapTrack Comments at 11-12.

[18] *See* AirTouch Comments and Petition for Waiver at 11; PrimeCo Petition for Waiver at 8-9; SnapTrack Comments at 11; US WEST Petition for Waiver at 10-11.

[19] Only Ameritech provided data concerning the total volume of 911 calls and those made by roamer customers within its cellular market areas. Ameritech Waiver Request at Exhibit B.

handsets frequently.[20] We are concerned that this type of customer, when served by a carrier deploying a handset-based system, may not enjoy the public safety benefits of ALI for an extended period of time. One solution may be to impose an obligation upon carriers adopting a handset-based system to offer either to retrofit or to replace subscriber handsets to make them ALI-capable at the carrier's expense or, at a minimum, at a very substantial discount, if subscribers have not upgraded their handsets by a certain date. This would help ensure that customers who do not regularly upgrade their handsets will not be left without ALI following the deployment of a handset-based system in their service area. We again seek comment on the potential costs of such an approach and request suggestions on what period of time would be appropriate before the carrier would be obligated to retrofit or replace non-ALI-capable handsets of its subscribers.

Sprint Spectrum commented that the best solution may be a combination of approaches. Specifically, Sprint favors deploying a handset-based system for new customers, along with establishing an interim network software solution capable of providing location information that would exceed Phase I requirements for those customers with non-GPS handsets and end users of other carriers roaming into a Sprint service area.[21] Sprint argues that this software-based network system, while not as accurate as the traditional triangulation devices previously proposed, would be substantially less expensive and would provide sufficient accuracy to meet public safety needs.[22] Specifically, Sprint contends that, were it to adopt a handset-based approach as its principal means of implementing Phase II E911 service, it would also install a software-based network solution that could provide location information with an accuracy within 285 meters for non-ALI-capable handsets.[23] Sprint's submission appears to present a means by which carriers adopting a handset-based system could provide ALI for all calls, as required by the rules. We request comment on this approach and the level of location accuracy that could be provided using this software-based network system.

METHODOLOGIES FOR DETERMINING ALI ACCURACY

In the *E911 Reconsideration Order*, Section 20.18(e) was amended to clarify that licensees subject to the section -- regardless of the ALI technology utilized -- must provide to the designated PSAP "the location of all 911 calls by longitude and latitude such that the

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[20] *See* Further Comments of APCO at 3 (proposing benchmarks for achieving specific penetration levels for ALI-capable phones). APCO argues that carriers with waivers should be required to take whatever steps are necessary to meet the penetration benchmarks, including public education and promotional efforts, and discounting phone prices to encourage more rapid replacement of non-ALI-capable phones on their system. *Id.*

[21] Sprint Spectrum Waiver Request at 3-4.

[22] Sprint Spectrum Waiver Request at 4.

[23] *See* Sprint Spectrum Waiver Request at 5; Sprint Spectrum Reply Comments at 2.

accuracy for all calls is 125 meters or less using a Root Mean Square (RMS) methodology.[24] Since the rule's amendment, the Commission has received several filings indicating that it may be necessary to reevaluate the appropriate methodology for determining ALI accuracy. Specifically, filings and presentations by Ericsson and the Wireless E9-1-1 Implementation Ad Hoc (WEIAD) group seek clarification of the accuracy requirement.[25] These parties argue that the RMS methodology adopted by the Commission should not apply to the ALI accuracy for all E911 calls because a small number of measurements that are very inaccurate will prevent a carrier from complying with the ALI requirement even if the vast majority of ALI measurements are less than 125 meters.[26] In response to the waiver requests, Cell-Loc commented that confusion still exists regarding the meaning of an RMS accuracy specification.[27] SnapTrack and other proponents of handset-based solutions advocate the use of CEP in evaluating the accuracy of those systems.[28] TruePosition, a proponent of a network-based solution, asserts that SnapTrack has mischaracterized the accuracy standard and the degree of market penetration necessary to exceed it.[29]

Because of the importance of this issue with respect to all ALI technologies, we seek additional comment on all of these arguments and invite recommendations on the appropriate methodology for measuring ALI accuracy, consistent with our goal of providing the best ALI accuracy for all callers.

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[24] 47 C.F.R. § 20.18(e).

[25] Ericsson *Ex Parte* Presentation in CC Docket No. 94-102 dated March 20, 1998 (Ericsson March 20, 1998 *Ex Parte*); Ericsson *Ex Parte* Presentation in CC Docket No. 94-102 dated April 6, 1998 (Ericsson April 6, 1998 *Ex Parte*); Letter to Magalie Roman Salas, FCC, from James R. Hobson, National Emergency Number Association, acting for WEIAD, CC Docket No. 94-102, dated November 25, 1998 (WEIAD *Ex Parte*).

[26] *See* Ericsson March 20, 1998 *Ex Parte* at 6-10 (unpaginated); Ericsson April 6, 1998 *Ex Parte* at 3-5 (unpaginated); WEIAD *Ex Parte* at 3-4.

[27] Cell-Loc Comments at 3-4.

[28] SnapTrack Comments at 8. *See also* AirTouch Comments and Petition for Waiver at 6; US WEST Petition for Waiver at 6 n.16.

[29] *See* TruePosition Response at 24-25; TruePosition *Ex Parte*.

PROCEDURAL MATTERS

Interested parties may file comments on the topics raised in this Public Notice no later than June 17, 1999; reply comments must be filed on or before June 28, 1999.[30] All comments should reference CC Docket No. 94-102. An original and five copies of all comments must be filed with the Office of the Secretary, Federal Communications Commission, 445 12th Street, TW-A325, S.W., Washington, D.C. 20554. If parties want each Commissioner to receive a personal copy of their comments, an original and ten copies must be filed. One copy of all comments should be sent to Mindy Littell, Policy Division, Wireless Telecommunications Bureau, 445 12th Street, S.W., 3-B103, Washington, DC 20554. One copy should also be sent to: International Transcription Service, Inc. (ITS), CY-B400, 445 12th Street, SW, Washington, DC 20554. Copies of SnapTrack's Comments and other pleadings in CC Docket No. 94-102 will be available for inspection and duplication during regular business hours in the Reference Information Center, Federal Communications Commission, Court Yard Level, 445 12th Street, SW, Washington, DC 20554. Copies may also be obtained from ITS, CY-B400, 445 12th Street, SW, Washington, DC 20554.

Because these comments will be included in CC Docket No. 94-102, and may be considered in the context of the ongoing wireless E911 rulemaking, we believe that it is appropriate to treat this as a "permit-but-disclose" proceeding in accordance with the Commission's *ex parte* rules. *See* 47 C.F.R. §§ 1.1200, 1.1206.

For further information, contact Mindy Littell or Dan Grosh at 202-418-1310, Wireless Telecommunications Bureau, Policy Division.

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[30] These comment dates would enable the Commission to issue an order in this proceeding by the end of the third quarter in this calendar year.